

[0042] What is claimed is:

1. A method comprising:

securing a semiconductor wafer to a wafer support system by causing a supported surface of said semiconductor wafer to be at a lower gas pressure than an exposed surface of said semiconductor wafer.

2. The method of claim 1, wherein causing said supported surface to be at said lower gas pressure includes at least:

placing said supported surface of said semiconductor wafer in contact with a perforated surface of said wafer support system inside a vacuum chamber;

reducing a gas pressure inside said vacuum chamber to substantially said lower gas pressure;

sealing an opposite surface of said wafer support system; and

removing said wafer support system and said secured semiconductor wafer from said vacuum chamber.

3. The method of claim 1, wherein causing said supported surface to be at said lower gas pressure includes at least:

placing said supported surface of said semiconductor wafer in contact with a perforated surface of said wafer support system in a first environment at a first temperature;

sealing an opposite surface of said wafer support system; and

removing said wafer support system and said secured semiconductor wafer from said first environment to a second environment at a second temperature that is lower than said first temperature.

4. The method of claim 1, wherein causing said supported surface to be at said lower gas pressure includes at least:

pushing a flexible surface of said wafer support system inwards towards a perforated surface of said wafer support system;

placing said supported surface of said semiconductor wafer in contact with said perforated surface of said wafer support system; and

releasing said flexible surface.

5. The method of claim 1, wherein causing said supported surface to be at said lower gas pressure includes at least:

placing said supported surface of said semiconductor wafer in contact with a perforated surface of said wafer support system; and

pulling an opposite surface of said support system outwards away from said perforated surface.

6. The method of claim 1, further comprising:

releasing said semiconductor wafer from said wafer support system by increasing said lower gas pressure.

7. The method of claim 6, wherein said supported surface is supported by a perforated surface of said wafer support system, and increasing said lower gas pressure includes at least:

removing an opposite surface of said wafer support system.

8. The method of claim 6, wherein increasing said lower gas pressure includes at least:

pushing a flexible surface of said wafer support system inwards towards said semiconductor wafer.

9. The method of claim 1, further comprising:

releasing said semiconductor wafer from said wafer support system by causing said exposed surface to be at a pressure lower than or substantially equal to said lower gas pressure.

10. The method of claim 1, further comprising:

releasing one or more dies of said semiconductor wafer from said wafer support system by increasing said lower gas pressure on the supported surface of said one or more dies while maintaining said lower gas pressure on the supported surface of other portions of said semiconductor wafer.

11. The method of claim 10, wherein increasing said lower gas pressure on the supported surface of said one or more dies includes at least:

pushing one or more portions of a flexible surface of said wafer support system inwards towards said one or more dies of said semiconductor wafer.

12. The method of claim 10, wherein increasing said lower gas pressure on the supported surface of said one or more dies includes at least:
 - piercing one or more portions of a flexible surface of said wafer support system corresponding to said one or more dies of said semiconductor wafer.
13. The method of claim 10, further comprising:
 - separating one of said one or more dies from said semiconductor wafer by coupling a die picker to the exposed surface of said one of said one or more dies.
14. A wafer support system comprising:
 - a body having a perforated surface to support a semiconductor wafer, said body having multiple cavities between said perforated surface and an opposite surface of said body, wherein said cavities have orifices to said opposite surface; and
 - a membrane to be attached to said body to seal said orifices.
15. The wafer support system of claim 14, wherein a smallest of said cavities is substantially equivalent in area to an area of a smallest of dies on said semiconductor wafer.
16. The wafer support system of claim 14, wherein said cavities have openings to said perforated surface and a number of said cavities substantially equals a number of said openings.
17. The wafer support system of claim 14, wherein said body includes at least a first part having said perforated surface and a second part having said opposite surface.
18. The wafer support system of claim 14, wherein said membrane is removable.
19. The wafer support system of claim 14, wherein said membrane is flexible.
20. The wafer support system of claim 14, wherein said membrane is rigid.
21. The wafer support system of claim 14, wherein said perforated surface is rigid.